



US007475886B2

(12) **United States Patent**
Otterlee et al.

(10) **Patent No.:** **US 7,475,886 B2**
(45) **Date of Patent:** **Jan. 13, 2009**

(54) **SHOPPING CART**

(75) Inventors: **Timothy A. Otterlee**, Marletta, GA (US); **Rodney L. Hempen**, Braselton, GA (US); **Graham C. Lobban**, St. Clements (CA)

(73) Assignees: **Redico, Inc.**, Buford, GA (US); **RTS Plastics, Inc.**, Ontario (CA)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 167 days.

(21) Appl. No.: **10/789,296**

(22) Filed: **Feb. 27, 2004**

(65) **Prior Publication Data**

US 2004/0164508 A1 Aug. 26, 2004

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/113,310, filed on Mar. 29, 2002, now Pat. No. 6,979,004.

(51) **Int. Cl.**
B62B 3/00 (2006.01)

(52) **U.S. Cl.** **280/33.993**; 280/33.992

(58) **Field of Classification Search** 280/33.991, 280/33.992, 33.993, 47.34, 47.35; 297/256.16; D34/12, 27

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

- 2,443,236 A * 6/1948 Gallagher 280/47.35
- 3,346,271 A * 10/1967 Parsons 280/33.998
- 3,497,234 A * 2/1970 Schray 280/33.993
- 3,885,806 A * 5/1975 Trubiano 280/33.993
- 3,999,774 A 12/1976 Rehrig
- 4,046,394 A 9/1977 Thompson, Jr.
- 4,067,591 A 1/1978 Celms
- 4,268,049 A 5/1981 Salvador

- 4,632,411 A * 12/1986 Badger 280/33.991
- 4,674,758 A 6/1987 Valley
- 4,968,047 A 11/1990 Ferris
- 5,002,292 A 3/1991 Myers
- 5,255,930 A 10/1993 Jones et al.
- 5,289,936 A * 3/1994 Jones et al. 220/4.28
- 5,312,122 A * 5/1994 Doty 280/33.992

(Continued)

FOREIGN PATENT DOCUMENTS

EP 0 133 235 2/1985

(Continued)

OTHER PUBLICATIONS

McCue Corporation, The Whole Bean Story, <http://www.mccuecorp.com/bean/beanstory.html>, visited Feb. 28, 2002.

(Continued)

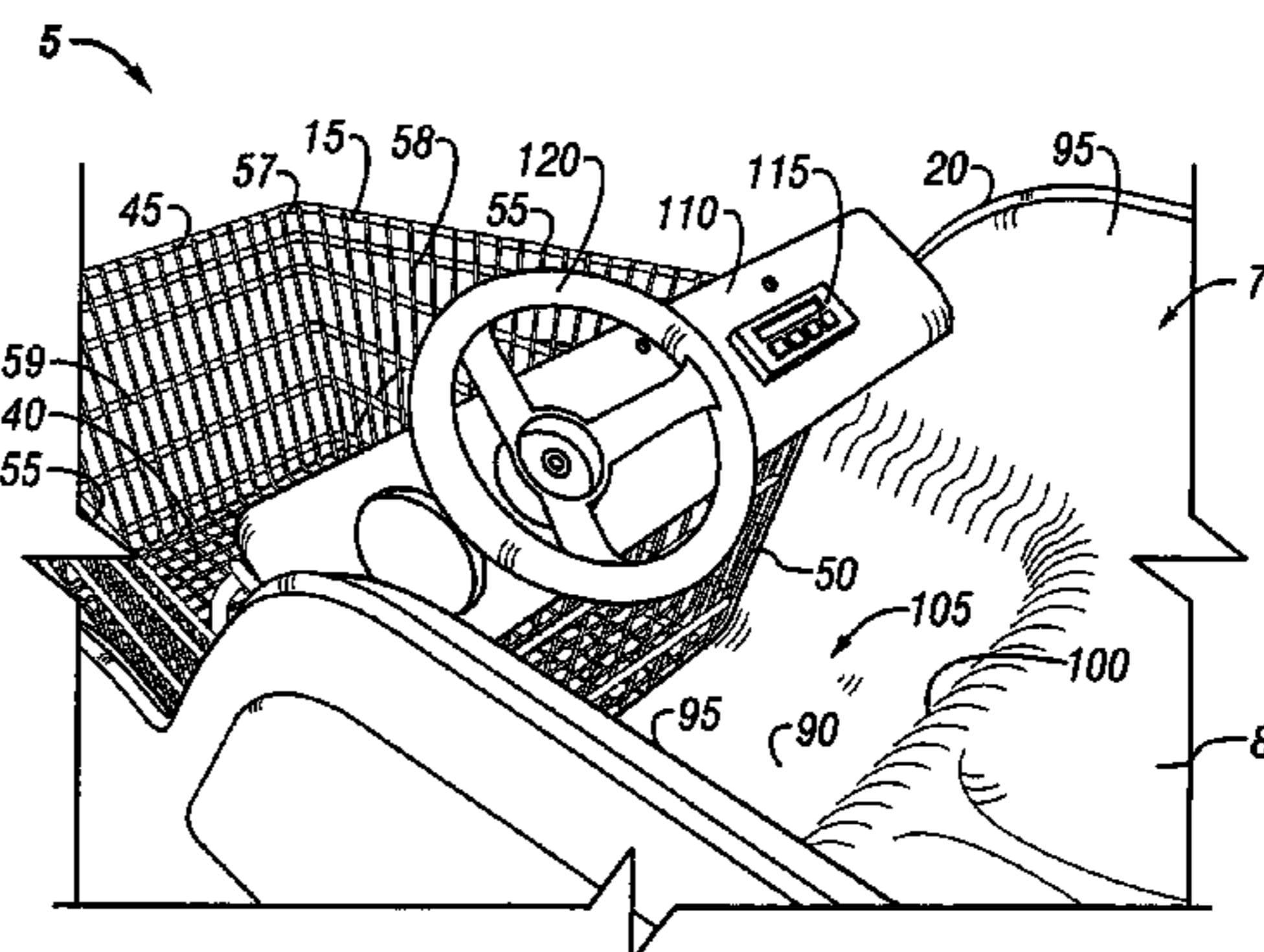
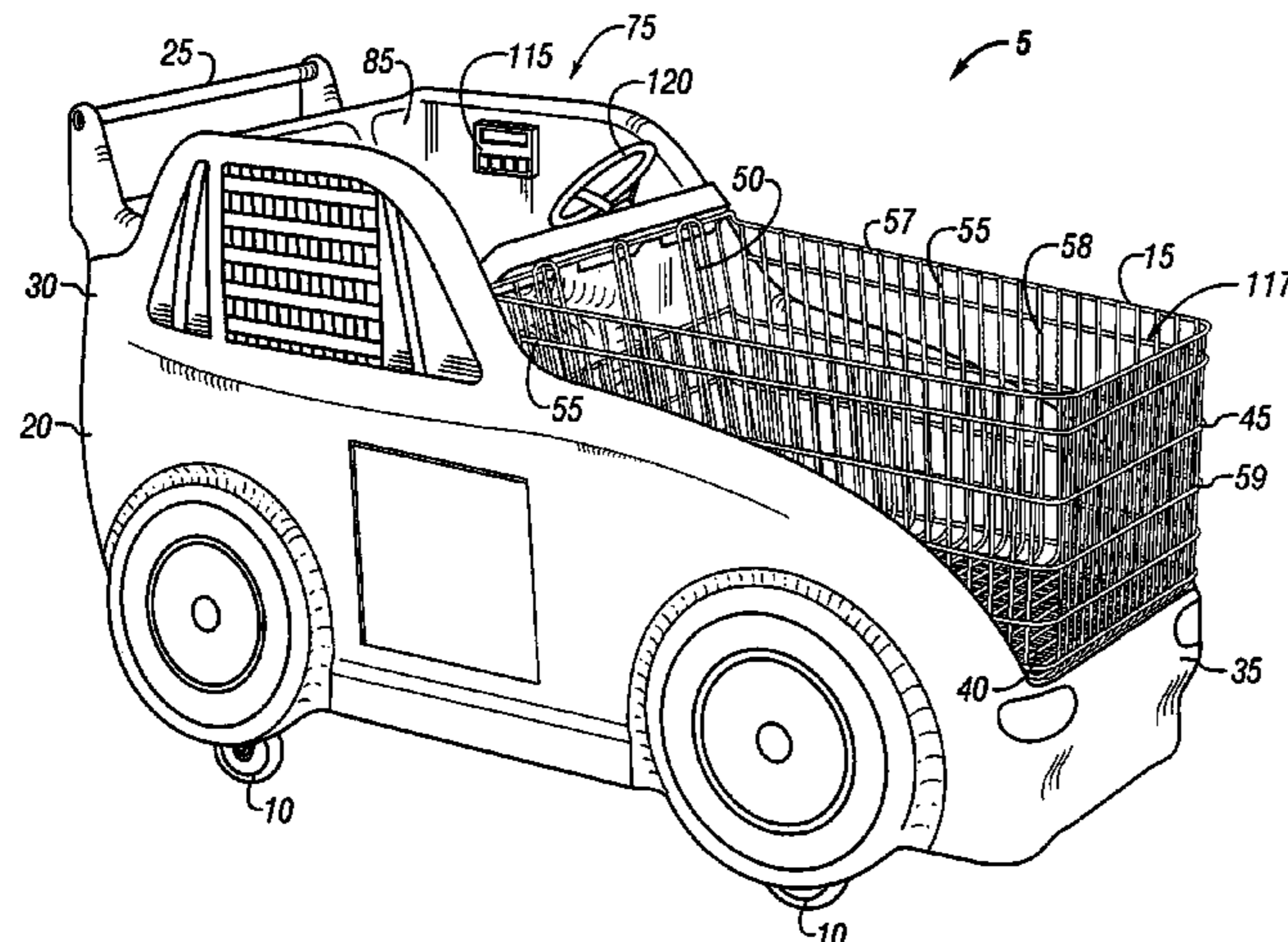
Primary Examiner—Frank B Vanaman

(74) *Attorney, Agent, or Firm*—Womble Carlyle Sandridge & Rice, PLLC

(57) **ABSTRACT**

The invention recites a child carrier comprising a seat portion including a seat, a backrest, and a floor. The child carrier further includes a substantially rigid body, at least partially surrounding and supporting the seat portion. The rigid body also includes substantially solid side surfaces and at least partially defines a panel. In addition, the child carrier provides a plurality of wheels supporting the body, and an electronic device supported by the body.

6 Claims, 5 Drawing Sheets



US 7,475,886 B2

Page 2

U.S. PATENT DOCUMENTS

5,361,871 A 11/1994 Gupta et al.
5,425,546 A * 6/1995 Gerber et al. 280/33.992
5,505,472 A 4/1996 Trubiano
5,553,876 A 9/1996 Trubiano
5,702,114 A 12/1997 Downing et al.
5,704,527 A * 1/1998 Struzer 224/547
5,773,954 A 6/1998 Van Horn
5,836,051 A 11/1998 Myers
5,865,448 A 2/1999 Kern et al.
5,961,133 A 10/1999 Perry
6,098,998 A 8/2000 Ondrasik
6,126,181 A 10/2000 Ondrasik
6,155,580 A 12/2000 Symons
6,237,924 B1 5/2001 Reiland et al.
6,270,093 B1 * 8/2001 Johnson et al. 280/33.993
6,364,326 B1 4/2002 Reiland et al.
D461,612 S * 8/2002 Lobban et al. D34/12
6,464,238 B2 10/2002 Reiland et al.
6,484,939 B1 11/2002 Blaeuer
6,513,817 B2 * 2/2003 McCue et al. 280/79.2
6,536,786 B1 3/2003 Katoozian
6,746,030 B1 6/2004 Bartlett
6,910,697 B2 6/2005 Varatharajah et al.

6,979,004 B2 12/2005 Otterlee et al.
D536,500 S 2/2007 McCue et al.
D536,854 S 2/2007 McCue et al.
2001/0028301 A1 10/2001 Geiger et al.
2002/0020977 A1 2/2002 Johnson et al.
2002/0117820 A1 8/2002 McCue et al.
2002/0165778 A1 11/2002 O'Hagan et al.
2004/0164507 A1 8/2004 Otterlee et al.
2004/0164508 A1 8/2004 Otterlee et al.

FOREIGN PATENT DOCUMENTS

FR 2 623 154 5/1989
GB 2 116 490 9/1983
JP 3-70674 3/1991
WO WO 92/05060 4/1992
WO WO 93/19967 10/1993

OTHER PUBLICATIONS

Infant/Toddler Juvenile Product Gift Guide, Kid Tips e-Magazine
http://toytips.com/giftguide/infant_toddler.html, visited Mar. 17,
2002.
Shopper's Aid and Baby Carrier by Mart Cart Form#020601, product
information.

* cited by examiner

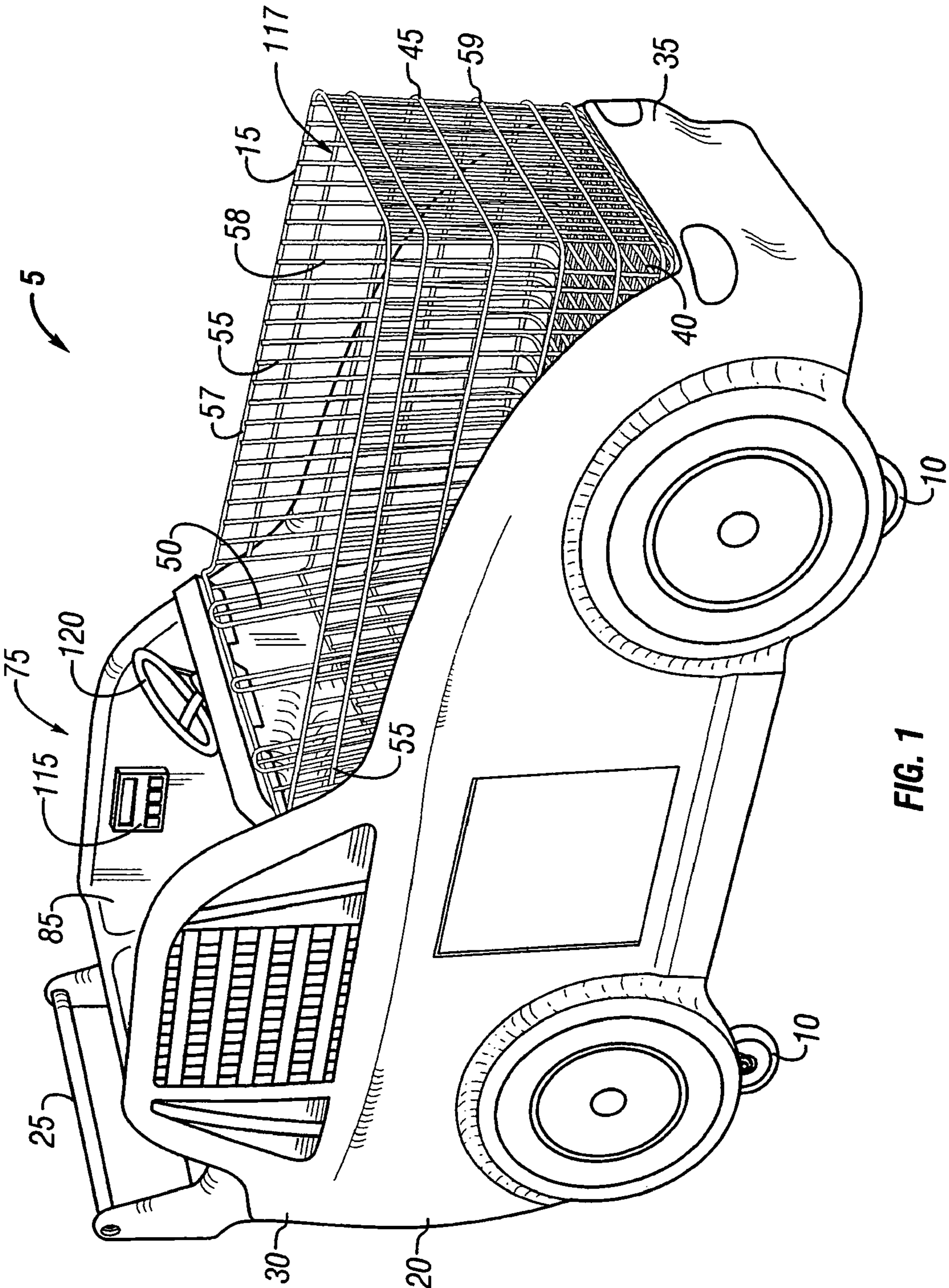


FIG. 1

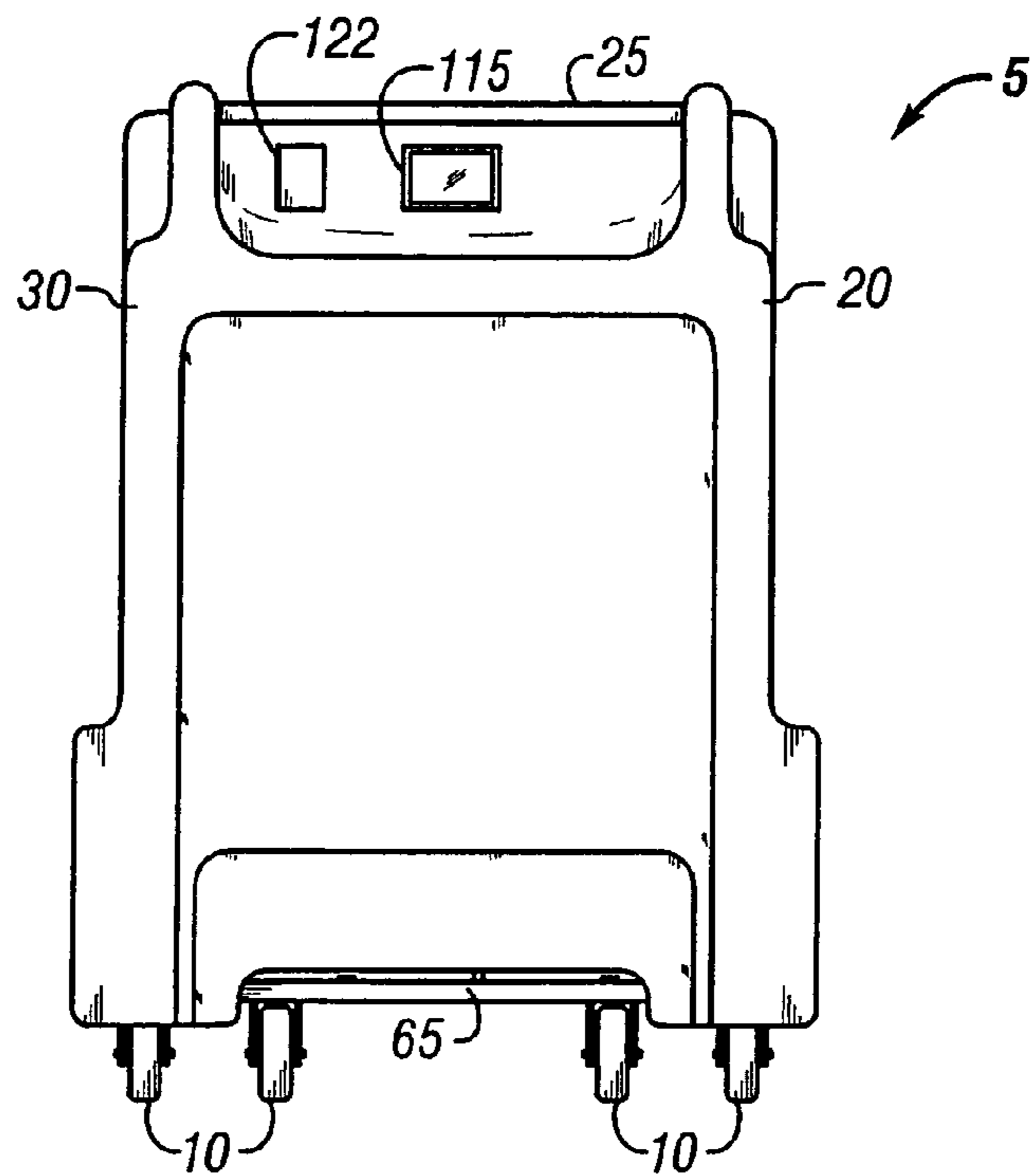


FIG. 2

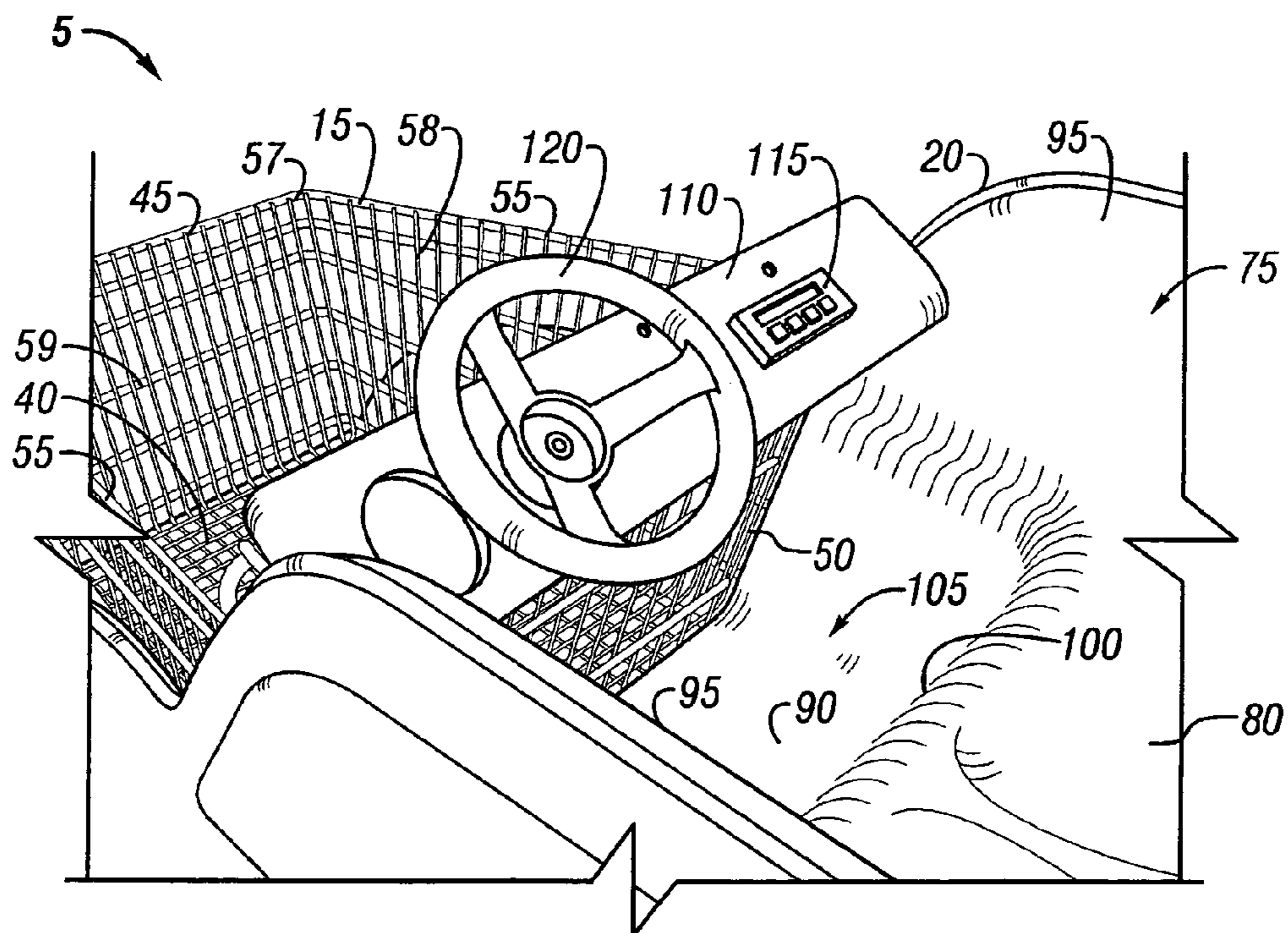


FIG. 3

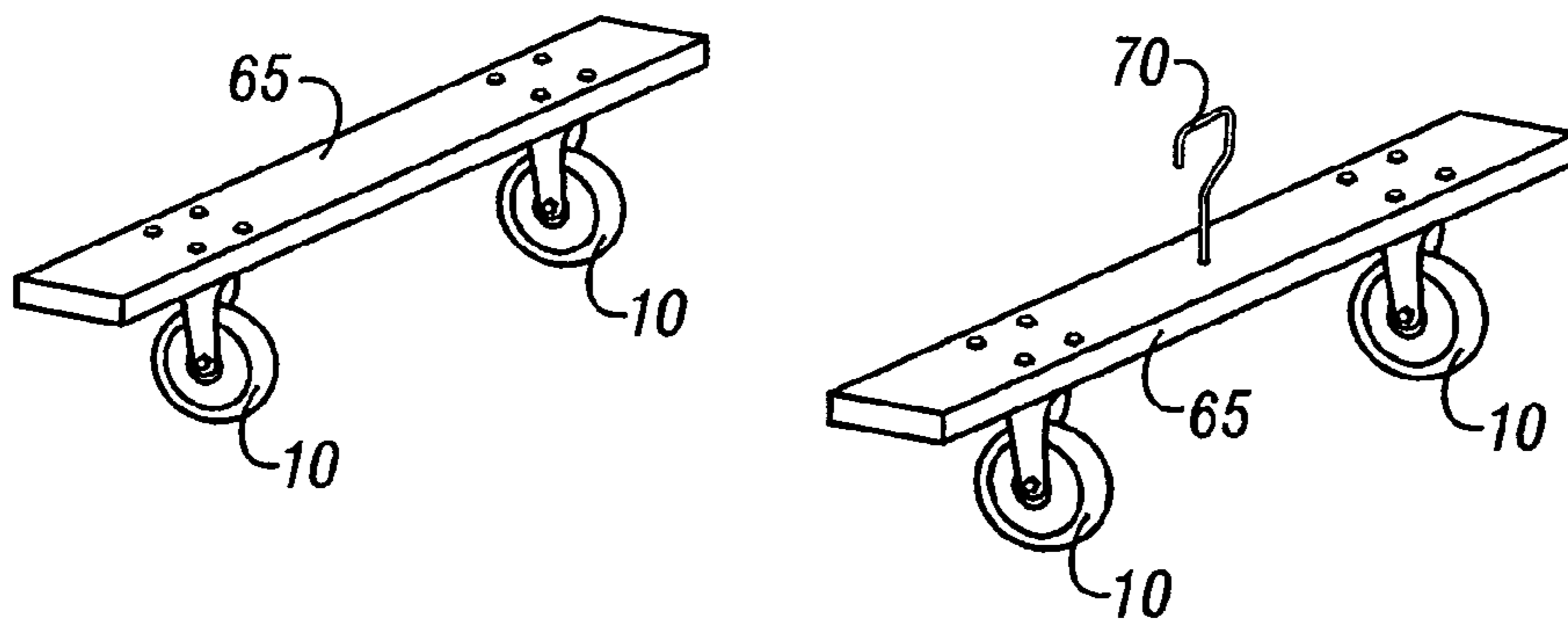
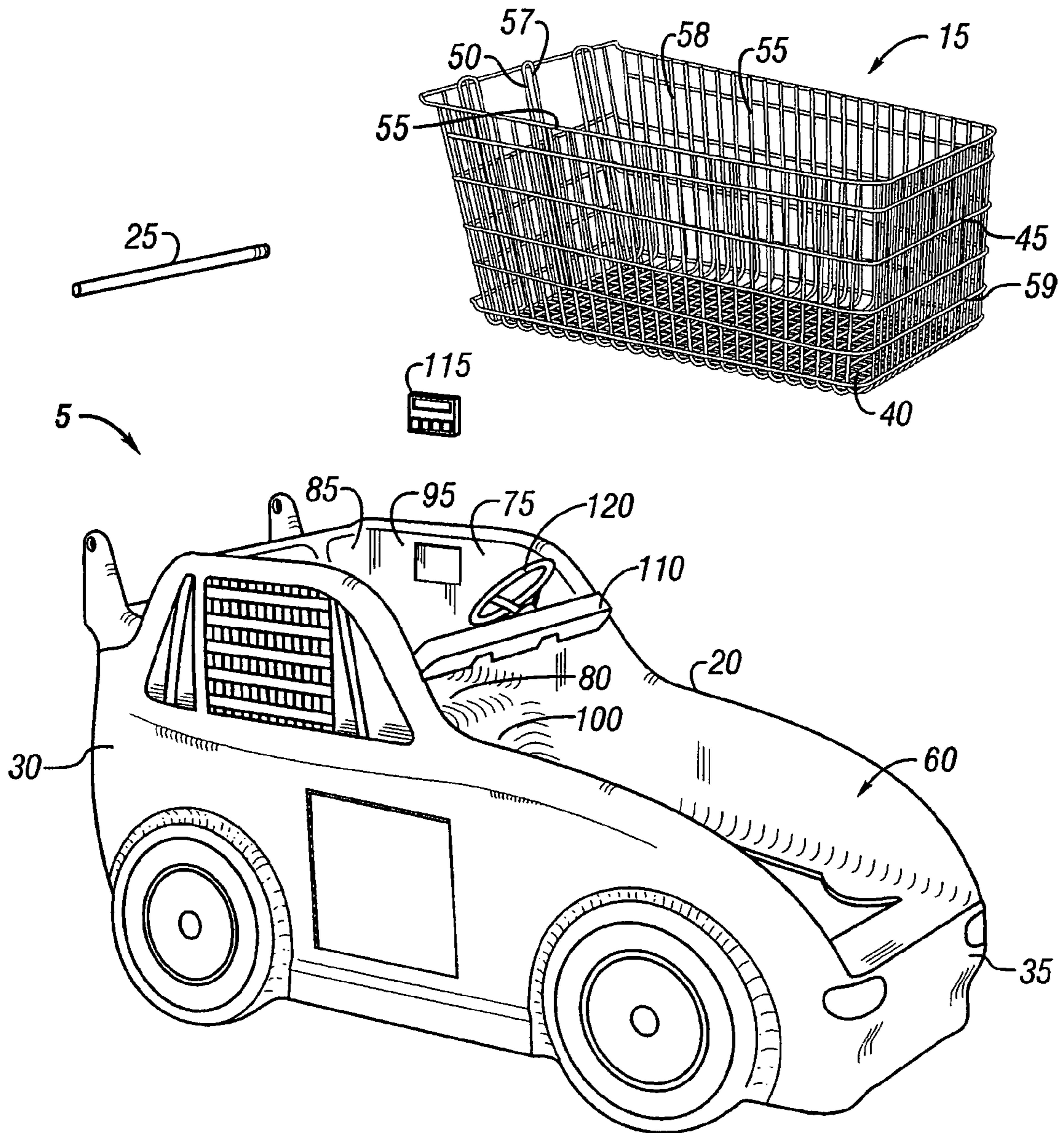


FIG. 4

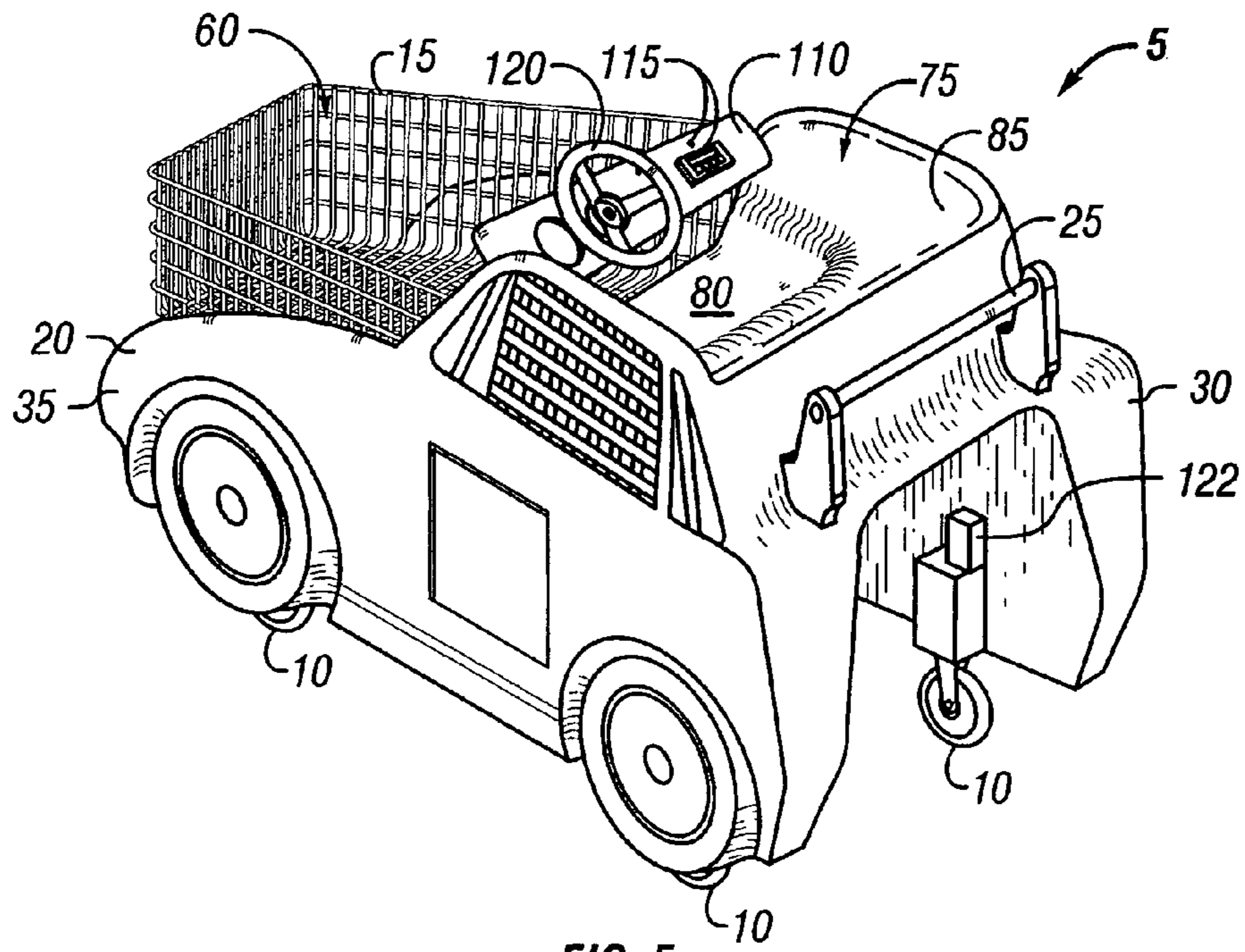


FIG. 5

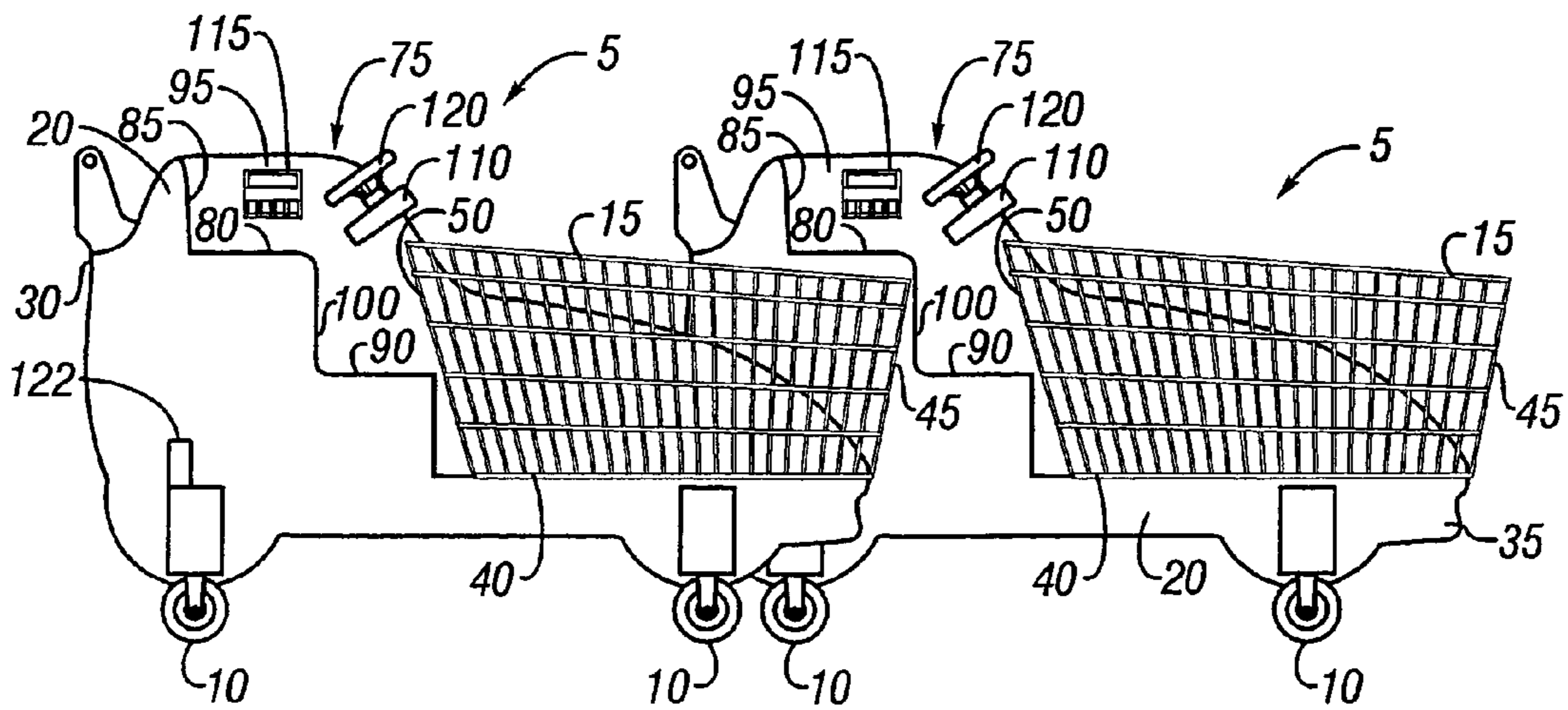


FIG. 6

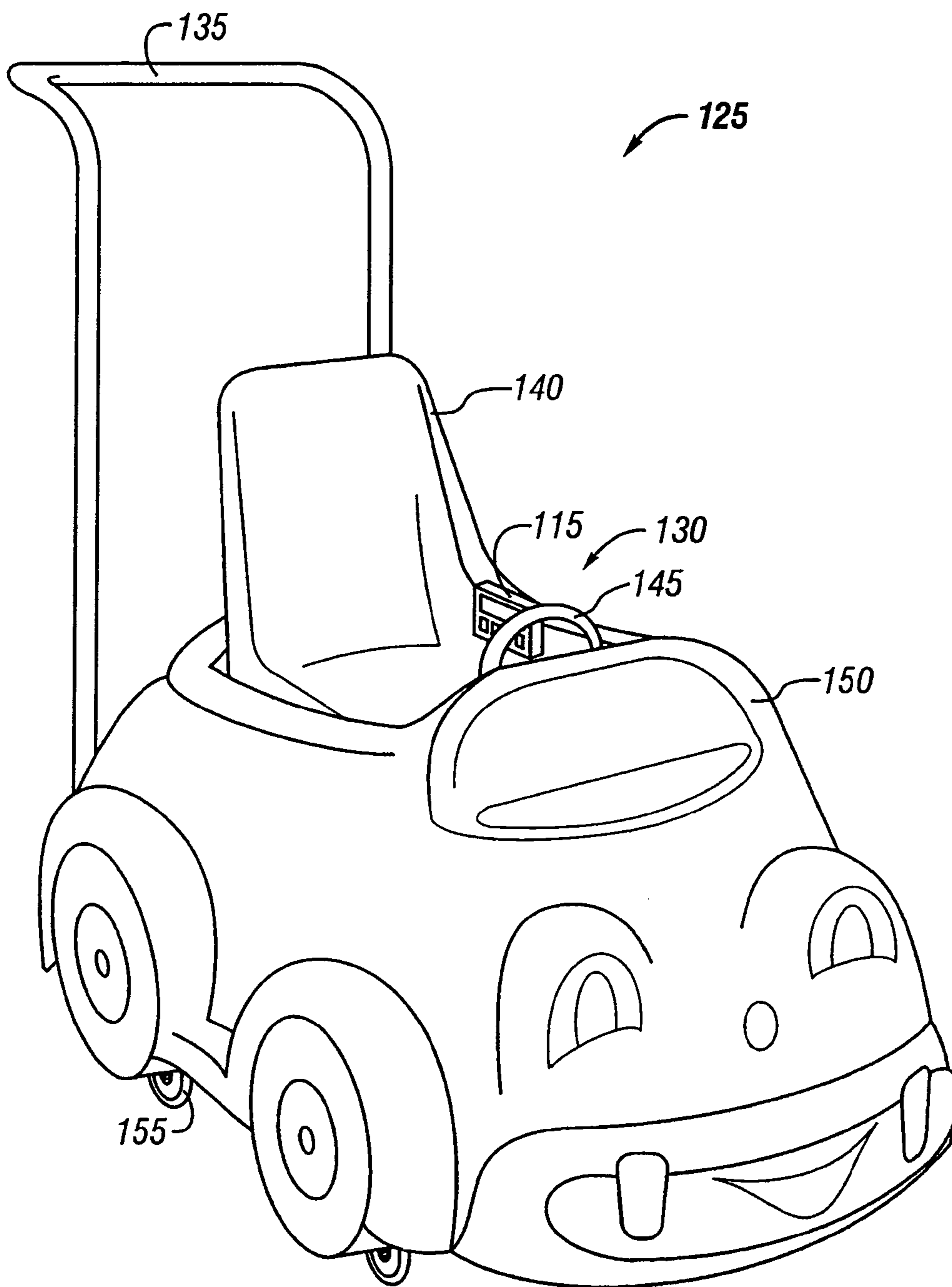


FIG. 7

1

SHOPPING CART

RELATED APPLICATION DATA

This is a continuation-in-part patent application of U.S. patent application Ser. No. 10/113,310 filed on Mar. 29, 2002, now U.S. Pat. No. 6,979,004 which is incorporated here in by reference.

BACKGROUND

The present invention relates to child carriers, and particularly to formed or molded child carriers having seats for children. More particularly, the present invention relates to formed or molded child carriers that provide entertainment for children.

Child carriers include strollers, shopping carts, attachments to shopping carts, and molded carts commonly used at super markets, home center stores, retail stores, theme parks and zoos. Each year thousands of children are injured in shopping cart, as well as other retail stroller, accidents. Generally, the child becomes bored with the shopping experience and tries to get out of the child carrier. A fall out of a carrier can cause severe injury. In addition, injuries occur when the child pinches his or her fingers in the moving mechanism of a typical seat or when the child reaches out of the carrier to grab something.

Many child carriers are simply wire or plastic mesh constructions that function as containers to carry consumer goods through a store and secondarily provide a seat for a child. Many of these carriers provide seats that are both uncomfortable and easy to escape. If a child becomes bored or uncomfortable, the chances for injury increase. In addition, many of the seats fold or utilize moving pieces that can easily pinch a small child's fingers.

Many child carriers also employ a seat that attaches to a pre-existing cart making the cart/carrier combination larger and heavier than typical child carriers, thus requiring more effort to push and maneuver the cart/carrier combination. Some of these carriers provide rearward looking seats that in many cases make it difficult for the child to observe where the carrier is going.

Other child carriers provide a more comfortable seat but still provide nothing to entertain the child. The child therefore has the tendency to become restless, potentially injuring himself or herself or misbehaving, making shopping more difficult. For example, child carriers used in commercial settings such as shopping malls and in entertainment settings such as zoos and theme parks are often shaped to pique the child's interest but once inside the child quickly becomes bored making the shopping or entertainment experience less enjoyable for the adult.

SUMMARY

According to the present invention a child carrier provides a seat portion including a seat, a backrest, and a floor. The child carrier further includes a substantially rigid body at least partially surrounding and supporting the seat portion. The rigid body also includes substantially solid side surfaces and at least partially defines a panel. In addition, the child carrier provides a plurality of wheels supporting the body, and an electronic device supported by the body.

In another embodiment of the present invention, a child carrier provides a substantially rigid basket including a front wall, a rear wall, two side walls, and a base. The child carrier further includes a body defining a basket portion, a seat por-

2

tion, and a push portion, the basket disposed substantially within the basket portion. In addition, the child carrier provides a plurality of wheels supporting the body and the basket, and an electronic device coupled to the body.

In preferred embodiments, the child carrier includes one or more headphone jacks that receive a signal from the electronic device. In addition, the electronic device is radio, a video display device, a computer, or video game player, or the like. Further, the electronic device in many preferred embodiments is interactive allowing the child to play and interact with the device.

In other preferred embodiments, the seat portion is disposed between the basket portion and the push portion such that the seat is above the base of the basket. In addition, in preferred embodiments, a first side wall, a second side wall, a rear wall, the panel and the rear wall of the basket substantially surround the seat and the floor.

Additional features and advantages will become apparent to those skilled in the art upon consideration of the following detailed description of preferred embodiments exemplifying the best mode of carrying out the invention as presently perceived.

BRIEF DESCRIPTION OF THE DRAWINGS

The detailed description particularly refers to the accompanying figures in which:

FIG. 1 is a perspective view of a cart in accordance with the invention having an electronic device;

FIG. 2 is a rear view of the cart of FIG. 1, showing another location for the electronic device;

FIG. 3 is a perspective view of the seat portion of the cart of FIG. 1, showing another location for the electronic device;

FIG. 4 is an exploded view of the cart of FIG. 1;

FIG. 5 is a perspective view of the cart of FIG. 1 having an open rear portion;

FIG. 6 is a section view of two nested carts in accordance with the present invention; and

FIG. 7 is a perspective view of another child carrier in accordance with the invention, having an electronic device.

DETAILED DESCRIPTION

FIGS. 1 and 4 illustrate a shopping cart 5 in accordance with the invention, the cart 5 includes a plurality of wheels 10, a basket 15, a body 20, and a push bar 25. The wheels 10, or castors, engage the body 20 and support the cart 5 on the ground. The push bar 25 engages a rear portion 30 of the body 20 providing a convenient surface to push and steer the cart 5. The basket 15 is supported and partially surrounded by the body 20.

The embodiment illustrated in FIGS. 1 and 4 uses four wheels 10 located near the extreme corners of the body 20 to support the cart 5. The wheels 10 are fairly standard in the industry, and therefore not critical to the invention. The wheels 10 are placed apart from one another to ensure that the cart 5 remains stable even when loaded with merchandise and children. The embodiment of FIG. 1 employs four wheels 10, other embodiments use only three, while still others use five, six or even more wheels 10. Generally, the rear wheels 10 are aligned and fixed so that they rotate about a common axis. The front wheels 10 on the other hand are generally free to pivot allowing a front portion 35 of the cart 5 to easily maneuver through the narrow aisles commonly found in grocery stores and the like. Other embodiments use wheel arrangements in which all of the wheels 10 are pivotable allowing for a more maneuverable cart 5.

The basket **15** illustrated in FIGS. **1** and **4** has a base **40**, a front wall **45**, a rear wall **50**, and two sidewalls **55**. A plurality of lateral and transverse wires **57** cross one another to define each wall **45**, **50**, **55** and the base **40**. The wires **57** firmly connect to one another using known attachment processes (e.g., welding, soldering, brazing, adhesives, mechanical fasteners, and the like). The wires **57** are preferably, steel or aluminum, but, other embodiments can use other materials (e.g., magnesium, titanium or other metals, composites, or plastics). Generally, the wires **57** are painted or coated with a material to prevent injury and to protect the wires **57** from damage. In one embodiment, the four walls **45**, **50**, **55**, and base **40** are made together as a single component. A plurality of U-shaped wires **58** are arranged laterally and transversely to completely define the base **40** and to define the vertical wires of the walls **45**, **50**, **55**. A plurality of ring-shaped wires **59** intertwine with the U-shaped wires **58** to complete the basket **15**. The wires **58**, **59** are attached to one another or to a basket frame to complete the one-piece basket **15**. Other embodiments employ multiple pieces to complete a basket **15**. For example, an embodiment that requires a pivotable rear wall **50** would require the rear wall **50** be made separately from the remainder of the basket **15**. It is thus contemplated that the basket **15** can be assembled from any number of individual components. It should also be noted that while a wire mesh basket **15** is shown and discussed herein, the invention will function equally well with a solid basket or a basket **15** formed from sheets of plastic rather than wires **57**. For example, multiple sheets of plastic formed in any common manner can be attached to one another at adjacent edges to define a basket **15**. In this example each wall **45**, **50**, **55** along with the base **40** would be separate components attached to one another to complete the basket **15**.

The basket **15** fits within an opening **60** defined by the body **20**. The front portion **35** of the body **20** is shaped to accept the basket **15** therein while providing support to the basket **15**. The body defines side walls that at least partially cover the side walls of the basket. In preferred constructions, the side walls cover at least about 10 percent of the surface area of each of the basket sides. In more preferred constructions, the side walls of the body cover at least about 40 percent of the surface area of the basket sides. Once installed, the basket **15** is fixedly attached to the body **20**. FIG. **4** illustrates one possible attachment mechanism. In FIG. **4** a brace **65** extends across the bottom of the body **20** to partially support the front wheels **10**. A hook-shaped bolt **70** engages the wires **57** of the base **40** of the basket **15** and extends through a hole in the brace **65**. A nut (not shown) threads onto the end of the hook-shaped bolt **70** fixedly attaching the basket **15** to the body **20**. In another embodiment (not shown), bolts and washers extend through the wires **57** of the base **40** of the basket **15**. The washers engage the basket **15** while the bolts engage the body **20** firmly clamping the basket **15** to the body **20**. In still another embodiment, the basket **15** simply sits in the basket opening **60** provided by the body **20**. In this embodiment, the basket **15** can be removed easily to facilitate storage, nesting of the carts, or delivery of groceries or other products to a vehicle or home.

The body **20** defines the front portion **35**, a seat portion **75**, and the rear portion **30**. The front portion **35** defines the basket opening **60** in which the basket **15** sits when the components are assembled. The seat region **75**, illustrated in FIGS. **1** and **3**, is disposed above and behind the front portion **35** and further includes a seat **80**, a back wall **85**, a floor **90**, and two sidewalls **95** that are arranged such that the seat portion **75** faces toward the front of the cart, as illustrated in FIGS. **1** and **3-7**. In addition, a rear kick panel **100** extends from the floor

90 to the seat **80**. The seat **80** is sized to support two small children in the seated position. The seat **80**, along with the back wall **85**, supports the children while the sidewalls **95** obstruct their exit from the cart **5**. The children's legs extend into a chamber **105** defined by the two side walls **95**, the rear wall **50** of the basket **15**, and the rear kick panel **100**. The chamber **105** thus completely surrounds the child's legs further enhancing the safety of the cart **5**.

Referring to FIG. **3**, the seat portion **75** further includes a panel **110** attached to the basket **15** or in some embodiments to the body **20**. To further contain the child and to provide for entertainment, the panel **110** is disposed such that it would be immediately in front of a child seated in the seat **80**. Electronic devices **115**, which will be discussed in more detail below, can be attached to or disposed in the front panel **110** to entertain the child. In addition, some embodiments employ seat belts (not shown) that allow the shopper to strap the child to the seat **80** if desired. In some constructions, the panel **110** can be removably attached to the cart. The removability would allow the cart owner to remove and securely store the panels **110** if they contain an electronic device. In addition, the removability would allow for easier maintenance and changes to the electronic device.

Many processes and materials are available to manufacture the body **20**, but the preferred technique involves the use of a rotomolded plastic. Rotomolding allows the body **20** to be manufactured as a substantially rigid single piece rather than multiple pieces, eliminating weaknesses and reducing cost. Other embodiments use processes such as injection molding and hot forming. In addition, while it is important to manufacture a lightweight body, other embodiments use materials other than plastic. For example, fiberglass or other composites are light and provide sufficient strength and durability and therefore would be suitable material substitutes. While it is preferable that the body **20** be made in a single operation, other embodiments employ several sections manufactured separately and then assembled to one another to complete the body **20**.

As illustrated herein, the body is generally formed to resemble an object (e.g., race car, rocket, air craft, boat, dinosaur, and the like) that may be familiar to a child. The body generally includes a paint scheme, decals, or other accoutrements that further enhance the desired theme. These bodies that are formed to resemble a theme generally enhance the child's experience and make the shopping experience more enjoyable for the shopper.

FIG. **1** illustrates an assembled shopping cart **5** in accordance with the invention. The body **20** covers a portion of the sides **55** of the basket **15** but leaves the front **45** and the top **117** open. In another embodiment, the body **20** extends around the basket **15** substantially covering all the walls **45**, **50**, **55** leaving only the top **117** fully exposed.

To further entertain children seated in the seat portion **75** of the cart **5**, some embodiments of the invention provide one or more steering wheels **120** attached to the panel **110** to allow the child to play during the shopping experience. In addition, other embodiments include one or more electronic devices **115** specially suited to the child's needs. For example, one embodiment provides two headphone jacks within the cart **5**. The jacks connect to a radio receiver tuned to the frequency of the store's internal broadcast or to any desired frequency. The child can thus listen to music, stories, or other entertainment provided by the store through the headphones without the sound disturbing other patrons. As one having ordinary skill in the art will realize, headphones can be used for the audio output of any device described herein. In yet another embodiment, a video display is provided in addition to the audio

5

device previously described. The video display receives a broadcast from within the store, over the airwaves, or is coupled to a video cassette recorder, digital videodisk (DVD) player, or the like to allow the display of any entertainment desired. In still another embodiment, a computer or video game is coupled to the cart **5** in a position that allows a seated child to interact. A joystick or other interactive device can be coupled to the body **20** of the cart **5** to allow the child to interact. In addition, the steering wheels **120**, described above can be interconnected with the game to provide input if desired. A person skilled in the art will realize that many commercially available technologies (e.g., flat screens, plasma screens, closed-circuit television, MP3 players, computers, and the like) can be adapted to the cart **5** or child carrier of the present invention to provide entertainment for children. Small rechargeable batteries **122** hidden within the cart **5** can power many, if not all, of these technologies.

In addition to the above-described devices, another embodiment of the cart **5**, shown in FIG. **2**, employs a small computer (e.g., PDA, calculator, micro-computer, etc.) powered by a rechargeable battery **122**. The computer is supported by the cart **5** in a position that allows the shopper to easily view the display. The computer can be used as a calculator to aid the shopper, or can be programmed with locations of various products within the store, or shopping center, to aid the shopper in locating desired products. In another embodiment (not shown), the computer is coupled to a portable bar code reader allowing the shopper to scan products as they are placed in the cart **5**. This greatly aids the shopper in maintaining a budget, and allows a shopper to review items placed in the cart **5** on the computer screen rather than having to search through the various products within the basket **15**.

FIG. **7** shows another embodiment of the invention in which an electronic device **115** is provided in a child carrier **125** suitable for carrying children in a retail or other shopping environment. The child carrier **125** does not have a basket like the carts **5** of the previous embodiments but rather performs the function of carrying and entertaining the child. The child carrier **125** has a seat region **130** having a push bar **135**, a seat **140**, and a steering wheel **145**, surrounded by the body **150**. The body **150** is supported by a plurality of wheels **155**. The electronic device **115** is disposed within the body **150** and supported such that children seated within the child carrier **125** can easily access and interact with the electronic device **115**. For example, the device **115** could be a television monitor that receives a signal from within the store. The monitor could display cartoons, stories, or educational programs that are of interest to young children. Other embodiments of the child carrier **125** include a basket (not shown) to aid the shopper. The basket could be hung from the push bar **135** or supported in some other convenient manner.

In another embodiment (not shown), the body is shaped to resemble an animal and the child carrier is used in a zoo or

6

carnival setting. The electronic device **115** could be a radio receiver able to pick up a broadcast emanating from within the zoo. Further, the radio receiver could receive a different signal based on its location allowing, the audio to describe the particular animals in the area.

As a person having ordinary skill in the art will realize, many electronic devices can be adapted to operate within a child carrier **125** or cart **5** as described herein. In addition, a person having ordinary skill in the art will realize that an electronic device as described herein can be adapted to fit within any molded body commonly used in child carriers. In addition, child carriers that use tubular frames may employ electronic devices disposed within a formed panel or piece that attaches to the child carrier. Thus, the present invention should not be limited to only those embodiments described herein.

Although the invention has been described in detail with reference to certain preferred embodiments, variations and modifications exist within the scope and spirit of the invention as described and defined in the following claims.

What is claimed is:

1. A shopping cart comprising:

a molded plastic body defining a front, a rear, a basket portion adjacent the front, and a seat chamber adjacent the rear, the seat chamber defining a substantially rectangular perimeter including a rear wall, a first side wall, and a second side wall, each of the walls at least partially defined by the molded plastic body and wherein the rear wall, the first side wall, and the second side wall are integrally formed as part of the body;

a panel coupled to the molded body to at least partially define a front wall of the seat chamber;

a basket at least partially disposed within the basket portion, wherein the panel is positioned between the seat chamber and the basket;

a frame coupled to the molded body;

a plurality of wheels coupled to the frame; and

an electronic device mounted along the body in a position facing the seat chamber, the electronic device including:

a video display device comprising a flat screen, a plasma screen, a computer screen, or a television screen.

2. The shopping cart of claim **1**, wherein the seat portion is oriented to face the front.

3. The shopping cart of claim **1**, wherein the panel is selectively removable from the body.

4. The shopping cart of claim **1**, wherein the basket includes a wire-mesh basket supported by the body.

5. The shopping cart of claim **4**, wherein the basket is fixedly attached to the body.

6. The shopping cart of claim **1**, wherein the molded plastic body is formed to resemble a theme.

* * * * *